

■ Polymerisation Unit **Wapo-Mat III**



SERVICE MANUAL

Dear customer,

Thank you for choosing a product from the Wassermann range. Wassermann Dental-Maschinen incorporates the highest standards of quality and the latest technology. In order to enjoy maximum performance and years of trouble-free operation, please read this service manual carefully before you connect this device and start work, and operate the device according to the recommended guidelines. The operation safety and the functionality of this device can only be guaranteed if you follow both the general safety guidelines and the applying laws to prevent accidents as well as the precautions given in this service manual. We are not liable for any damages which occur due to inappropriate usage or faulty operation of this device.



Make sure that anyone using this device has read and understood this service manual.

Keep this service manual in a safe place where it can be referred to as required at any time.



The unit complies with the relevant EU guidelines.



The unit is subject to the EU guidelines 2012/19/EU (WEEE Directive).

Company address:

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1 Features

- Compact benchtop unit for long-time and boiling polymerisation
- Fully automatic program sequence, capable to handling 9 flasks simultaneously
- Touchscreen-multifunctional display with minute and degree settings, remaining time reading
- Powerful, electronically controlled heater for optimal water temperature, low water level indicated visually and audibly
- Energy-saving tank thermal insulation
- Low maintenance, easy to clean
- All stainless steel construction

2 Safety Symbols used in this Manual



Warning!

This is a warning of risk situations and dangers.

Failure to observe this warning could be life-threatening. These warnings has to be observed.



Information!

This symbol draws your attention to specific features that has to be observed.

3 Safety Guidelines

Configuring and operating this equipment requires **precise knowledge** and **observance** of the instructions in this **service manual**. The equipment is designed only for its intended application.



WARNING:

Servicing and repairs should be carried out only by authorised specialists.
Disconnect the power plug before starting any maintenance work.



Make sure that the equipment is connected to the correct power source.




Wear heat-retardant gloves when working with the Wapo-Mat III.

4 Responsibility for Operation or Damage

The responsibility for operating the device lies exclusively with the owner or user if said device is incorrectly serviced, maintained or altered by persons not employed by an authorised dealer or if the device is used in a manner contrary to its specified purpose. The unit has to be maintained and operated in accordance with this service manual. Wassermann Dental-Maschinen GmbH is not responsible for damage arising from the **nonobservance** of these instructions.

Warranty and responsibility provisions contained in the sales and supply conditions of Wassermann Dental-Maschinen GmbH are not extended by these instructions.

4.1 Warranty

 The warranty period for our equipment is 12 months. If faults occur within the warranty period, contact your dental depot or get in touch directly with our service department.

Your equipment should only be operated in perfect condition. If faults occur which could harm operators or third parties, the unit should not be used until it has been fixed.

This warranty does not cover damage caused by improper use, external mechanical causes, transport damage or interference with the unit by unauthorized persons.

5 Application


The Wapo-Mat III is designed for water-bath polymerisation. All readily available plastics can be polymerised fully automatically, slowly (up to 99 hours), and at high temperature (99°C).

Only use the device for this type of application.

6 Before Starting

6.1 Transport

Before transporting the unit, ensure that it has been unplugged from the power socket. Make sure that it is packed correctly in order to avoid accidental damage.

 Be sure to check for any transport damage when unpacking the goods. Note down any damage if found.

6.2 Installation

Remove all packing material and place the unit on an even and stable surface.
Check the parts included in delivery (see 8.5).



Place the unit so that the work area is freely accessible and operation is not restricted. (Please consider the structural dimensions).



Do not place the unit outdoors.

Before start-up, be sure the device reaches room temperature.



We strongly recommend to install the unit firmly to the discharge system, since it is equipped with an automatic water overflow discharge system, i.e. too much filled water runs out automatically, even when the discharge cock is closed. Furthermore complete emptying for cleaning purposes etc. is thus simplified.

6.3 Storage

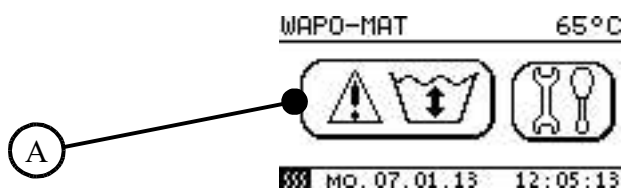
The unit should not be stored or set up outdoors.

In case of long-term storage, the unit must be protected against humidity and dust.

7 Installation/ Commissioning/ Menufunctions

Before commissioning, please install the following connections:
Firmly clamp the supplied drainage hose to the device and ensure there is a suitable drainage facility.

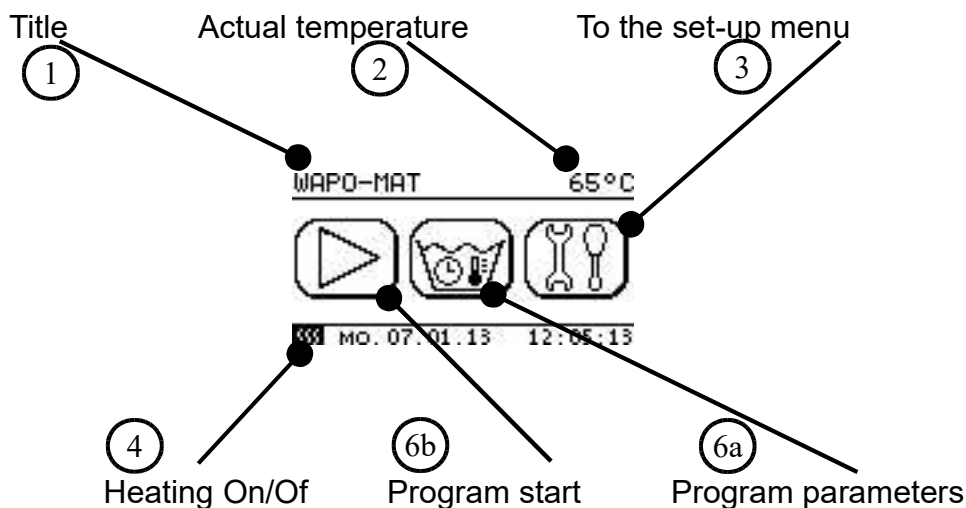
Insert the plug into the socket – make sure that the voltage information between the device and the mains network is identical. Fill the device with mains water to above the white plastic ring in the container (max. 18.5 litres). Switch on the mains switch (green rocker switch). Symbol **(A)** must not appear.



Water deficit

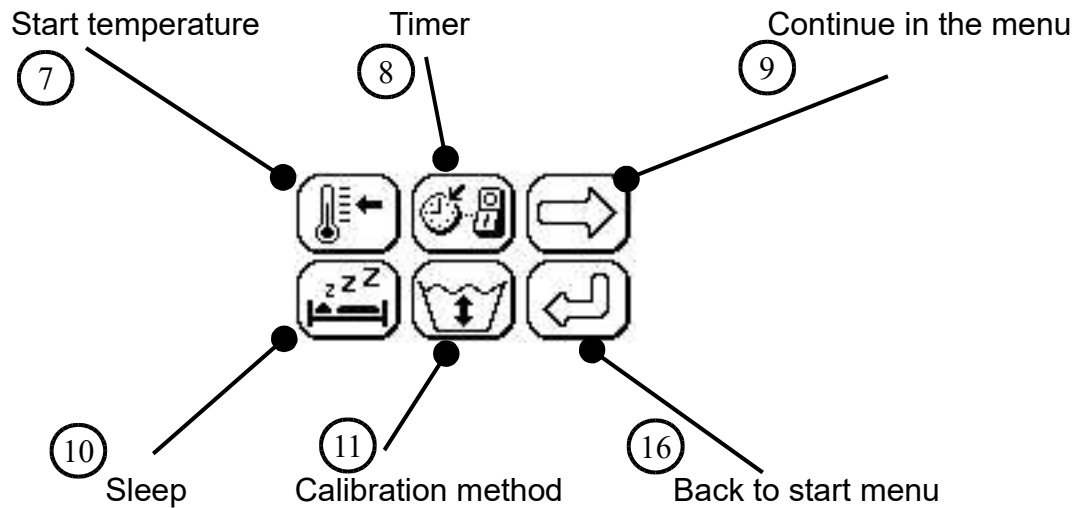
Make sure you define the device's main parameters before switching it on. These settings are performed in the set-up menu **(3)** Familiarise yourself with the many options which the system offers before starting polymeration. This applies in particular to functions **(7)** and **(14)**

The Set-Up Menu

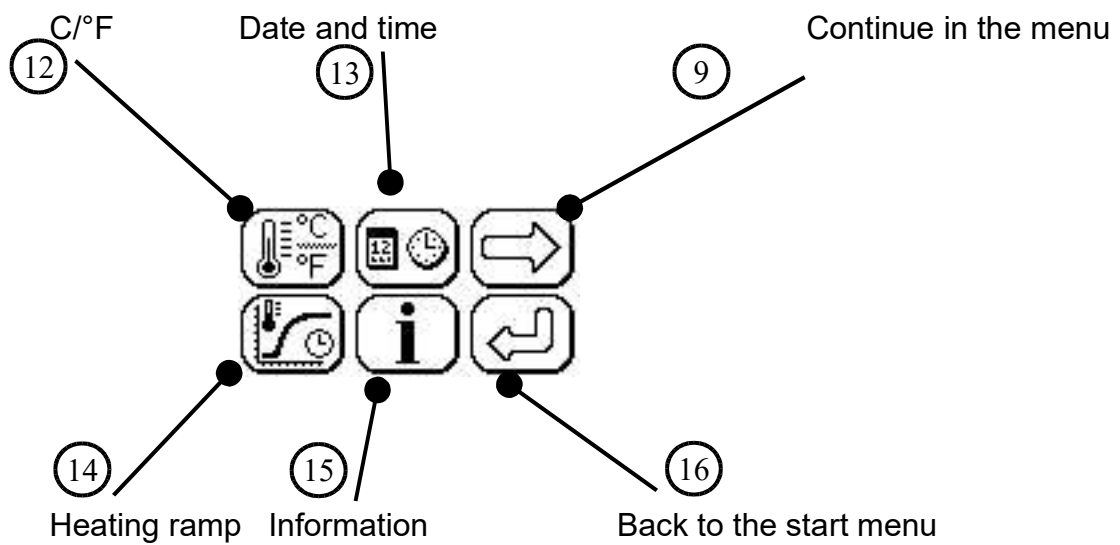


The Set-Up Menu Page 1

Make the following settings in the set-up menu:



The Set-Up Menu Page 2



Description of Functions 6 - 14

6a Program Parameters

Defines the parameters for the program temperature and time. Touch the numbers to change the values. It is possible to store up to three polymerization steps # 1-3.

#	🌡️	🕒	▶️
1	70°C	6:30h	▶️
2	--°C	--:--h	
3	95°C	1:30h	

Polymerization Step 1:

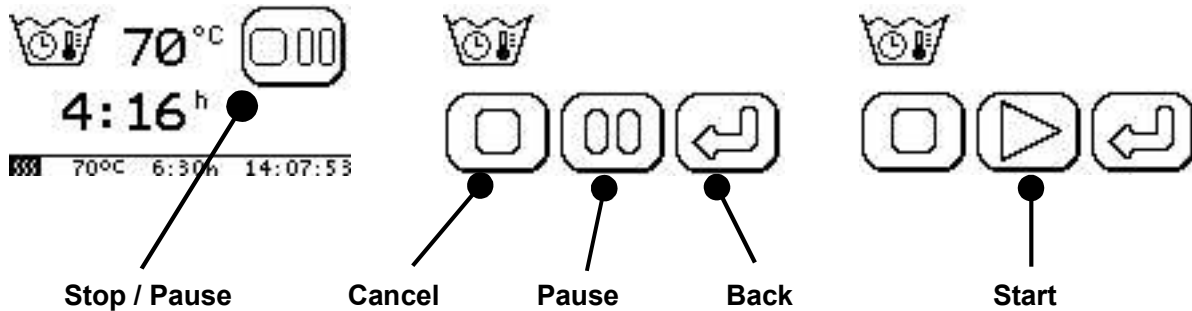


Examples of the Steps 2 and 3:



Touch the arrow to start the polymerization. Interrupt or cancel the program using Start/Stop.

6b Polymerization



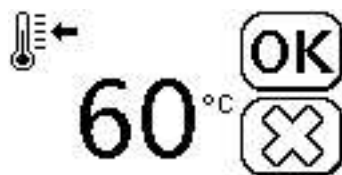
7 Preheating Temperature

Defines the target temperature once the main switch has been activated.

The preheat temperature also applies to waiting times and rest periods. Default: 65°C

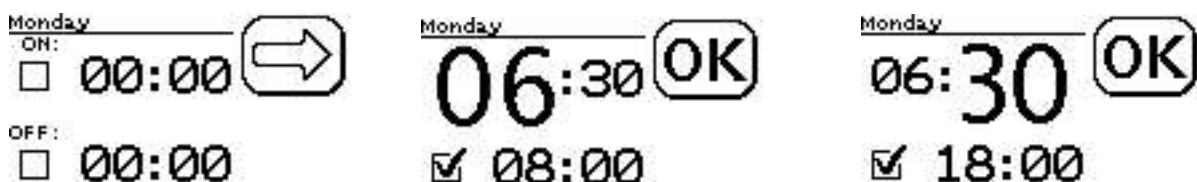


If the programme temperature selected is higher, the temperature falls back to this value when the programme ends.



After defining the desired mode it may make sense (14) to adjust the preheat temperature of the programme temperature. This avoids long heating up or cooling down phases.

8 Timer. This defines the weekday activation and deactivation times.



Programs running currently have a higher priority; they are not switched off until complete.

⑩ **Sleep Button Display**



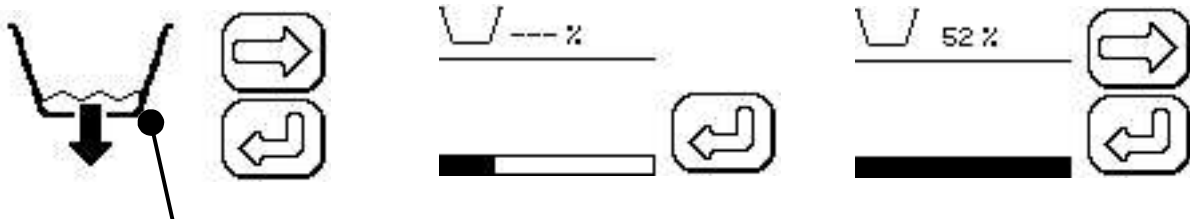
Press the Sleep button to switch the system to sleep mode.

⑪ **Definition of Calibration Method**

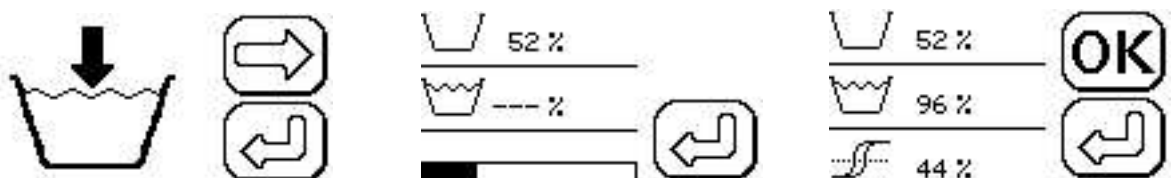


DEF: Default (calibrated for mains water)

CAL Calibration (only necessary for extreme deviations in water quality)



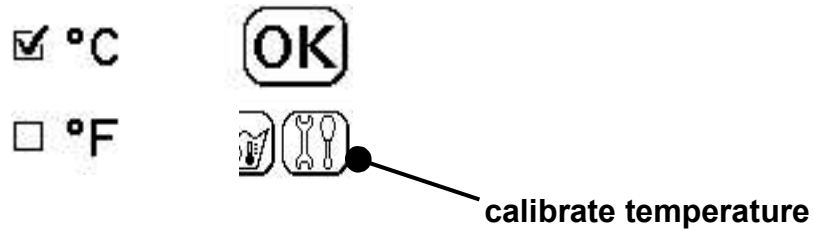
Drain water



Replenish water.

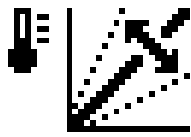
This measure defines the conductance of the water!

⑫ Choose between °C Celsius and °F Fahrenheit



If the temperature deviates from the device, the temperature sensor can be calibrated. To do this, use a second thermometer to measure the water temperature inside the unit at the desired pre-heating temperature. If there is a deviation, the heating curve of the device can be adjusted. For calibration, a relative offset value and an absolute offset value are available (please see following sections ⑫a and ⑫b).

12a **Calibrate the temperature with a relative offset**



Change the value and the algebraic sign by tapping on the respective numeral.

+0.0 %

The relative offset of the heating curve causes a correction of the temperature value in percent to the measured value. As shown in the symbol, the angle of the heating curve is adjusted when you change this value. The relative offset value can be set in the range of -9.9% to +9.9%.

12b **Calibrate the temperature with an absolute offset**



Change the value and the algebraic sign by tapping on the respective numeral.

+0.0 °C

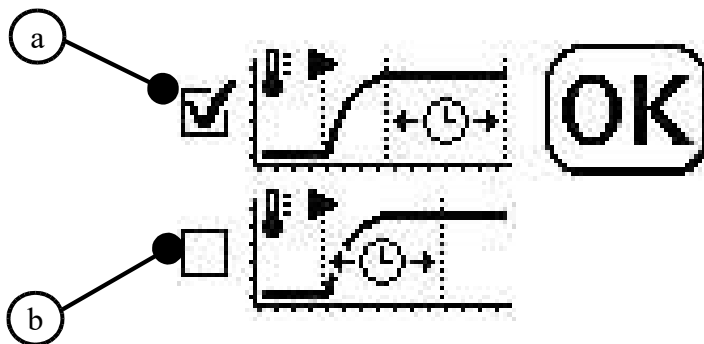
To correct the heater curve by a value in °C or °F, you can use the absolute offset of the heater curve. As shown in the symbol, the zero crossing of the heating characteristic shifts when this value is changed. The absolute offset value can be set in the range of -9.9°C to +9.9°C or in Fahrenheit from -18.0°F to +18.0 °F.

13 Pictogram for the Sequence in Time and Date Function



14 Choice of Working Mode

Defines whether the time should start immediately or once the heating value has been reached.



(a) (Default) Unit heats up to the temperature programmed via 6b. After reaching this value, the result measured is validated by a control cycle. If the value is confirmed, the polymerization will start.

(b) The programmed polymerization starts immediately.

8 Operation

8.1 General Operating Instructions

All recommendations to operate the device, whether verbal or written, are based on our experience and tests and can therefore only be considered reference points.



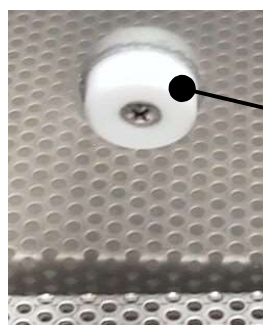
The Wapo-Mat III is protected against dry running in order to prevent the heating from burning out (flashing symbol: display on the left). While the program is running, an alarm sounds when there is insufficient water. Take care that the water level is always above the white plastic ring (see in the housing), as the heating and the program will otherwise shut down automatically! An additional safeguard protects the heating against overheating; it is automatically deactivated at above 99°C.



Wear heat-retardant gloves when working with the Wapo-Mat III.



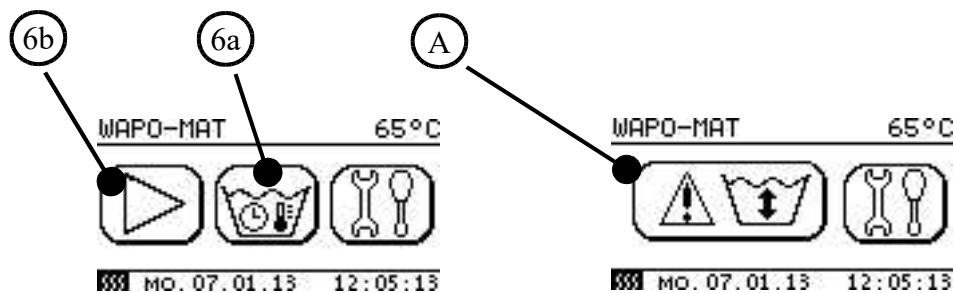
Unplug the device if it is not in use for a longer period.



Water level sensor

8.2 Operation

- Fill the work device with mains water to above the white plastic ring in the container (max. 18.5 litres).
- Activate main switch (green rocker switch).
- Check the water level – the low water alarm (A) must not flash.
- Place prepared cuvettes in the device clamp.
- The polymerization is started by touching the symbol (6b) or alternatively via the parameter menu (6a)
- After the polymerizations process has ended, the temperature falls/rises to the preset temperature again. (7).



9 Troubleshooting

Fault	Cause	Solution
Wapo-Mat III does not heat up	Dirty level sensor	Clean level sensor
	Water level too low	Add water
Water-level LED comes on and warning tone sounds. Fig.: 1	Dirty level sensor	Clean level sensor
	Water level too low	Top up water until control light goes off
Touch display does not respond (malfunction)	Re-calibrating the touch display	Turn the unit on and while the Wassermann logo appears tap the touch display twice. This will take you to the self-explanatory touch panel calibration process. Fig.: 2-3
Programme not starting although set temperature has been reached.	In mode (a) the unit intentionally overheats by 1°C and waits briefly to validate the value.	This is not a fault, please wait roughly 45 sec.



If the above recommendations do not solve the problem, contact your dental depot or our service department.

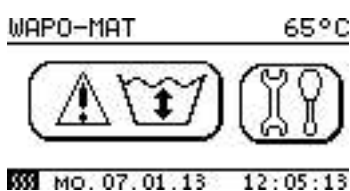


Figure 1



Figure 2

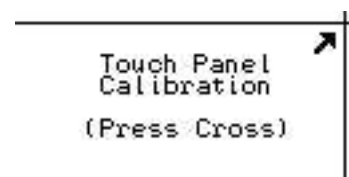


Figure 3

10 Maintenance

10.1 Cleaning



Pull out the mains plug before maintenance work.

The **model plate** must always be legible and must not be removed.



Clean the outside of the unit and any accessories with a sponge and/or a soft cloth and mild detergent.

The equipment should be cleaned regularly to guarantee problem-free operation.



Please clean the water level sensor (white plastic ring) every 14 days with a brush.



Clean every 4 weeks with Kalk-Ex

Quantity: approx. 300ccm Kalk-Ex per full tank (18.5 litres water).

If there is considerable limescale present, increase the amount of Kalk-Ex appropriately.

The *initial supply* of Kalk-Ex comes with the machine.



Allow KALK-EX max. 12 hours to work. Drain solution and rinse thoroughly.

Observe protective measures (wear wraparound protective glasses and suitable gloves). Avoid contact with skin, eyes and clothing. Do not swallow or breathe in lime remover. Otherwise seek medical help.

10.2 Maintenance

The Wapo-Mat III does not require any special maintenance. You just need to keep it clean.

10.3 Repairs



Servicing or repairs to the equipment must only be carried out by trained technicians. Only **original Wassermann spares** are to be used. Responsibility for the product is voided if altered by unauthorised persons or if inappropriate components are installed.

10.4 Spare Parts

If necessary please contact our service hotline phone.

10.5 Service Hotline 0049 (0)40 730 926 -20/ -24

10.6 Scope of Delivery/ Accessories

Included parts	Item no.
Discharge hose, PVC hose 19 x 4 (3/4") - 1500 mm long	---
Hose clip Ø 20 – 32 x 12,2	322017
Kalk-Ex, lime remover - 1000 ccm	655002

Accessories:	Item no.:
Discharge hose, PVC hose 19 x 4 (3/4") - per meter	320030
Kalk-Ex, lime remover - 1000 ccm	655002

11 Technical Data

Wapo-Mat III	Item no.: 170980
Voltage*	220–240 V / 50/60 Hz
Power consumption:	8 A
Output:	1800 W
Overall dimensions: Width x Height x Depth	330 x 460 x 530 mm
Weight:	18,5 kg
Capacity :	18,5 l

*Other voltages on request.

The noise level of the unit amounts to ≤ 70 dB (A).



Technical changes reserved.

12 Disposing of the Unit

The unit has to be disposed by an authorized recycling operation. The selected company has to be informed of all possibly health-hazardous residues in the unit.

12.1 Information on disposal for countries within the EU



To conserve and protect the environment, prevent environmental pollution and improve the recycling of raw materials, the European Commission adopted a directive that requires the manufacturer to accept the return of electrical and electronic units for proper disposal or recycling.

Within the European Union units with this symbol should not therefore be disposed of in unsorted domestic waste.

For more information regarding proper disposal please apply at your local authority.

13 EU Declaration of Conformity

in accordance with 2014/35/EU (Low Voltage Directive) and 2014/30/EU (Electromagnetic Compatibility Directive) and 2006/42/EC (Machinery Directive) and 2011/65/EU (RoHS Directive)

Manufacturer: **W A S S E R M A N N** Product description: Polymerisation
Dental-Maschinen GmbH Unit for dental
Rudorffweg 15-17 applications
21031 Hamburg
Germany

Model: Wapo-Mat III Item no. 170980

Applicable standards
DIN EN 61010-1
DIN EN 61000-6-3
DIN EN 61000-6-1
DIN 45635-1
DIN EN 60335-1

Hiermit wird bestätigt, dass die oben bezeichnete Maschine den genannten EU-Richtlinien entspricht. Diese Erklärung wird ungültig, falls die Maschine ohne unsere Zustimmung verändert wird.

This is to confirm that the above mentioned machine complies with the described EU guidelines. This declaration becomes invalid if the machine is modified without our approval.

Cette machine est conforme aux normes en vigueur d'Union européenne. Cet avis est nul et non avenant si cette machine est modifiée sans notre accord.

Esta máquina, anteriormente mencionada, cumple con los límites requeridos por el reglamento UE. Ahora bien, esta declaración quedará invalidada en caso de realizar modificaciones al aparato sin nuestra aprobación.

Hiermee wordt bevestigd dat bovengenoemde machine voldoet aan de voorgeschreven EU normen. Deze verklaring verliest geldigheid als er zonder onze uitdrukkelijke toestemming wijzigen aan de machine worden aangebracht.

Place, date: Hamburg, 2020-02-28

Company stamp :



Signature: _____

Sven Wassermann
(Managing Director)



WASSERMANN
DENTAL-MASCHINEN GMBH
Rudorffweg 15-17 · 21031 Hamburg

1	2	3	4	5	6	7	8
1	Poly-Beutel 800 x 950 x 0,05	72		671012			
1	Instamate-Folie 2 x 900mm breit	71	3m	670122			
1	Instapak-Schaumstoff Component B-FFS	70	470g	670121			
1	Instapak-Schaumstoff Component A-FFS	69	550g	670120			
1	WP-Falkaton D2,9 BC 600 x 480 x 625	68		670006			
1	Kalklöser in PVC-Flasche	67		655002			
1	Gegenmutter GM 13	66		584015			
1	Kabelverschraubung MZI 9	65		584006			
1	Kabelbinder KB 102	64		582006			
1	Flachstecker, abgew. 4,6;3	63		581043			
2	Flachsteckverteiler 6,3;0,8	62		581030			
2	Isolierhülse f. Flachstecker 2,8	61		581017			
1	Flachsteck-Schraubklemme 2-polig	60		580017			
1	Kapillarrohregler 30-110°C	59		556004			
1	Entstör-Einbaufilter DL-10K1	58		552018			
1	Entstör-Einbaufilter 3A	57		552003			
1	Elek. Lastrelais 230 V 15A	56		514017			
4	Abstandsboizen M3 x 6 6-kt.	55	Poly	511201			
1	Wippschalter, grün IP 65	54		511161			
1	Netzteil 100-240 V AC/ 12V DC 2,5 W	53		508012			
4	Gummifuss 32 x 32 - H6 SW 65 26 016	52		392008			
1	Kugelfahrn mit vollen Durchgang	51		325051			
1	Doppelnippel G1/2	50		325048			
1	Schlauchschelle D20-32 x 12,2	49		322017			
1	PVC-Schlauch 19 x 4 (3/4")	48	1500mm lg.	320030			
1	Schriftbandkassette SW b = 36 mm	47	55mm lg.	310200			
1	Erdungszeichen, selbstklebend	46		310057			
2	Klebeschild "NETZSTECKER ZIEHEN"	45		310009			
6	Schraube DIN 7985 M3 x 6	44	VA	208208			
1	KFC - Ring 26 x 32 x 2 (3/4) DIN 7603	43		205223			
1	CU-Dichtung DIN 7603 A - R1/2	42		205202			
13	Facherscheibe DIN 6798 J4,3	41	VA	204037			
6	Facherscheibe DIN 6798 A3,2	40	SI Cr	204009			
7	Scheibe DIN 9021 A4,3	39	VA	204005			
4	Scheibe DIN 125 A 4,3	38	VA	204004			
6	Blindniet D4 x 6	37	VA	203105			
Stück	Beschreibung	lfd. Nr	Material	Zeichnungsnr.			

1	Mutter DIN 439 M12 x 1	36	VA	202095			
19	Feder - Mutter D4	35		202067			
8	Mutter DIN 934 M3	34	VA	202065			
1	Mutter DIN 934 M10	33	PVC	202024			
20	Mutter DIN 934 M4	32	VA	202019			
12	Schraube DIN 7380 M4 x 10	31	VA	201543			
4	Schraube DIN 965 M3 x 6	30	VA	201514			
3	Schraube DIN 7985 M4 x 6	29	VA	201111			
1	Schraube DIN 966 M4 x 30	28	VA	201110			
4	Schraube DIN 963 M3 x 16	27	VA	201018			
1	Schraube DIN 7985 M4 x 8	26	VA	200040			
1	Kabelbaum	25		170677			
1	Temperaturreichblech	24		170673			
1	Maniel - Vorderseite	23		170672			
1	Gehäuse, geschiw	22		170670			
1	Behälter, komplett	21		170645			
1	Isolierung	20		170637			
1	Abfluss	19		170636			
1	Behälterersatz, komplett	18		170630			
1	Bodenklappe	17		170626			
1	Deckel, komplett	16		170625			
1	E-Winkel	15		170614			
1	Tastolie (Touchscreen)	14		170350			
1	Platine-Touchscreen	13		170309			
1	Displaygehäuse	12		170308			
1	Winkel für Netzteil	11		170307			
1	Displayblech	10		170304			
1	Thermoführer - Behälter aussen -	9		170303			
1	Schlauchanschluss - Abfluss	8		170229			
1	Stopfbuchsaufnahme	7		170119			
1	Schelle Teil 1	6		170094			
1	Hahnverlängerung G 1/2	5		170060			
1	Isolierhülse	4		170057			
1	Rohrnetzkörper	3		170053			
1	Stützwinkel	2		170045			
1	Winkel	1		170041			
Stück	Beschreibung	lfd. Nr	Material	Zeichnungsnr.			

* gilt ab 27/15		Allgemein- toleranzen ISO 2768-m		SOLID WORKS	
max	min	max	min	max	min
28,02	14	AG			
		SW			

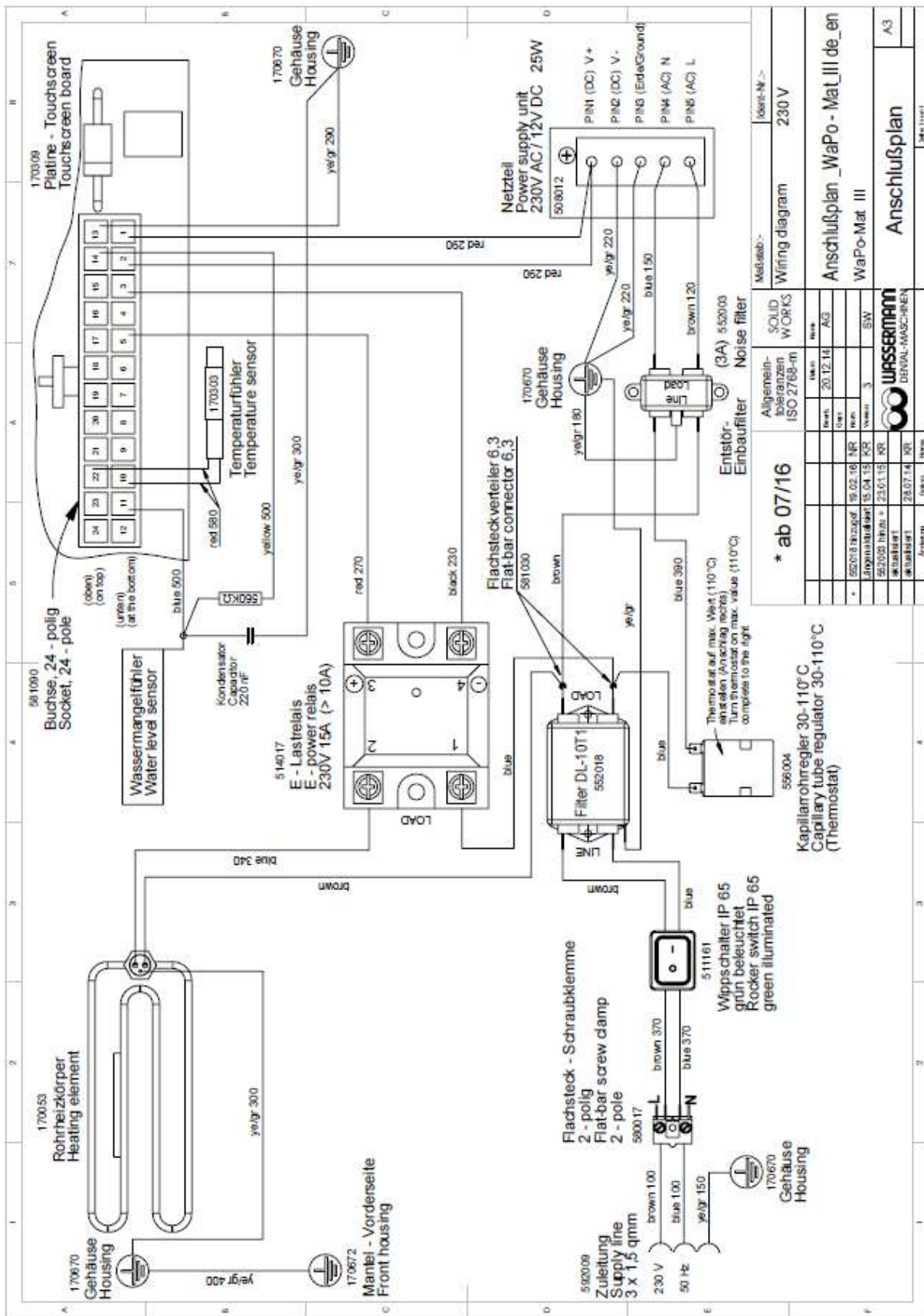
Material	Montagezeichnung	Identif.:
Wapo - Mat III	170980	

Material	Montagezeichnung	Identif.:
Polymerisationsgerät EU	170980	

Material	Montagezeichnung	Identif.:
Wapo - Mat III	170980	

Material	Montagezeichnung	Identif.:
Polymerisationsgerät EU	170980	

15 Wiring Diagram



* ab 07/16		Allgemein-toleranzen ISO 2768-m		Ident-Nr. --	
SOLID WORKS		Wiring diagram		230 V	
Anschlussplan _WaPo - Mat III de_en		WaPo-Mat III		Anschlussplan	
WASSERMANN		WASSERMANN		A3	
DENVAL-MASCHINEN		DENVAL-MASCHINEN		Date: 11/2011	
Reviz	20.12.14	AG			
Erst	19.02.16	NR			
Approv	15.04.15	KR			
Verf	23.01.15	SR			
Gezeichnet	26.07.14	SR			

Notes:



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